

## **REMARKS**

Please reconsider the rejections of the claims in light of the following arguments and allow the pending claims.

Applicants have submitted a Supplemental IDS with the present action. The Supplemental IDS addresses the problem that the Examiner noted with the citation of a German patent application (WO 91/07090) in a previously submitted IDS and also cites an additional reference for the Examiner's consideration. The Examiner is respectfully requested to indicate acceptance of this Supplemental IDS.

The Examiner had issued a duplicate claim warning with regards to claims 59 and 60. Applicants have hereby mooted the Examiner's warning by their cancellation of claim 60.

I. **Rejection under 35 U.S.C. § 112, first paragraph and second paragraphs**

In the Office Action dated September 25, 2003, the Examiner rejected claims 1, 46-54, 56, 58-62, 70, 71, and 78-103 under 35 U.S.C. § 112, first paragraph, because the specification, while being enabled for treating or controlling microorganisms on a surface with an anti-microbial composition, was thought by the Examiner to not be enabled for preventing microorganisms from forming on a surface.

The present application demonstrates at multiple instances that the claimed composition prevents the formation of microbial colonies on or at a surface and that the claimed composition, therefore, is enabled without undue experimentation. For example, the Application states that biofilms (*i.e.* coatings of microbial colonies) form via

three distinct stages, (i) adhesion or attachment, (ii) proliferation and (iii) biofilm differentiation. See Application, page 1, lines 22 and 23. The claimed composition prevents stage (i) from occurring and, therefore, prevents microbial colonies from forming on or at a surface. See Application, page 7, lines 20 - 25. The claimed composition is able to prevent the growth and formation of microbial colonies on a surface because of the specific selection of components included in the claimed anti-microbial composition.

As discussed at page 7, line 20 to page 8, line 25 and page 10, lines 14 to 22 of the Application, the claimed composition includes both high and low surface tension compounds. These compounds have opposing surface tension effects and are believed to interact in such a way as to create a microscopic turbulent effect. This turbulence prevents microorganisms from adhering or attaching to a surface (*i.e.* prevents stage (i) above). If stage (i) is prevented, then stages (ii) and (iii) clearly cannot take place and, thus, microbial colonies and biofilms are prevented from forming.

Furthermore, Examples 5 to 7 and 14 of the Application provide additional evidence that the claimed composition successfully prevents the formation of microbial colonies on a surface. See Application, pages 32 to 40 and 53. In these Examples, panel surfaces were coated with an anti-microbial composition of the present invention and were then exposed to microorganisms. The compositions substantially prevented microbial colonies from forming on the panels as compared to control panels that lacked the anti-microbial treatment.

In the Office Action, the Examiner also rejected claims 61, 78, 86, 87, 92-98, 101, and 102 under 35 U.S.C. § 112, second paragraph, as being indefinite due to a spelling

error. Applicants have amended claims 61, 78, 86 and 87 to replace the spelling error of “bezenethanaminiumn” to benzenemethanaminium. Likewise, the specification has also been corrected at each instance where this spelling error occurs. The correction of a minor spelling error does not introduce new matter into the specification. A person of ordinary skill in the art would have readily appreciated that “bezenethanaminiumn” does not exist and that what was actually intended was benzenemethanaminium.

Claims 92 to 98 have been amended so that they clearly include the step of *applying* the anti-microbial composition to a surface. This amendment should overcome the Examiner’s concerns regarding the omission of essential steps in claims 92 to 98. Finally, claims 101 and 102 have been canceled, thus mooted the Examiner’s rejection of these two claims. Therefore, it is respectfully requested that the Examiner withdraw the rejection of claims 1, 46-54, 56, 58-62, 70, 71, and 78-103 under 35 U.S.C. § 112, first and second paragraphs.

## **II. Rejections under 35 U.S.C. § 102(b) and 103(a)**

In the Office Action, the Examiner rejected claims 1, 46-54, 56, 58-62, 70, 71, 79, 80, 83-85, 88-90, 92, 95-97, 100, and 103 under 35 U.S.C. § 102(b) in view of the UK Patent Application No. GB 2247171 to Jackson (Jackson). Applicants have amended claim 1 to clarify that the second compound comprises at least one compound selected from the group consisting of silanes, soya lecithins, siloxanes, and mixtures thereof. Claims 79, 80 and 103 have been canceled in view of the amendment made to claim 1. Applicants have also added new claim 104, which specifies that the second compound is a polysiloxane or a blend of polysiloxanes.

Per the Examiner, the disinfectant of Jackson describes the essential limitations of the claimed invention including, for example, a first compound, a second compound, and a first anti-microbial agent. Applicants respectfully submit that the presently claimed invention differs from Jackson.

Jackson discloses a method of disinfecting surfaces and compositions that can be used to disinfect surfaces. The compositions comprise a mixture of a quaternary ammonium compound and a chlorinated methyl substituted phenol at a ratio of between 4:1 and 1:1.5. The compositions also comprise at least one aqueous mono-hydric alcohol and, optionally, at least one polyhydric alcohol. See Jackson, page 3, line 4 to page 4, line 2. Jackson employs water as a suitable polar solvent.

Applicants have hereby overcome the § 102(b) rejection to Jackson in light of the amendment to claim 1. There is simply no disclosure in Jackson of compositions comprising a compound having a low surface tension of from 8 to 14 mN/M and selected from the group consisting of silanes, soya lecithins, siloxanes and mixtures thereof. Because Jackson does not disclose the low surface tension compounds as set forth in amended claim 1, Jackson cannot anticipate the pending claims. Therefore, it is respectfully requested that the Examiner withdraw the 35 U.S.C. § 102(b) rejection of claims 1, 46-54, 56, 58-62, 70, 71, 79, 80, 83-85, 88-90, 92, 95-97, 100, and 103.

The Examiner also rejected claims 82, 91, and 99 under 35 U.S.C. § 103(a) as being unpatentable over Jackson. The Examiner stated on page 5 of the present Office Action that it would have been obvious to one of ordinary skill in the art to determine the optimum amount of Jackson's polyethylene glycol to be used in the anti-microbial

composition and the proper amount of anti-microbial composition to be used in the formulation.

Applicants submit that the rejections of claims 82, 91, and 99 under 35 U.S.C. § 103(a) have been overcome in light of the present amendment to claim 1. Jackson neither teaches nor suggests the claim 1 limitation (and, therefore, the limitations of dependent claims 82, 91, and 99) of a second compound having a low surface tension of from 8 to 14 mN/M and selected from the group consisting of silanes, soya lecithins, siloxanes and mixtures thereof.

In addition, the anti-microbial compositions of the present invention are used to accomplish different purposes as compared to Jackson. The primary object of Jackson is to provide a method for disinfecting surfaces already contaminated with bacteria. The compositions of the present invention have this same effect and also prevent adhesion and attachment of microorganisms to a treated surface. See Application, Examples, pages 32 to 40. Thus, the present invention prevents or reduces future contamination in addition to disinfecting already contaminated surfaces. In other words, the anti-microbial compositions of the present invention are formulated to have a much longer acting effect than the compositions of Jackson. There is simply no disclosure in Jackson that would have encouraged a person of ordinary skill in the art to seek to provide a composition having such a long acting effect as does the composition now claimed.

The fact that the compositions of the present invention are effective against a wide variety of microorganisms for long periods of time as demonstrated by the Examples is entirely surprising and unexpected in view of the teaching of Jackson.

Thus, the anti-microbial compositions of independent claim 1 (and, therefore, dependent claims 82, 91, and 99) are inventive in view of the disclosure of Jackson. Therefore, it is respectfully requested that the Examiner withdraw the rejection of claims 82, 91, and 99 under 35 U.S.C. § 103(a).

With the exception of claim 103, all of the other claims depend from independent claim 1. In claim 103, the second low surface tension compound has been amended in the same manner as the presently amended claim 1. Thus, the subject matter of the remaining claims is novel and non-obvious for at least the same reasons as claim 1.

### **III. Election of Species**

The Examiner stated in the present Office Action that the elected species, “bezenethanaminium N-dodecyl-N,N-dimethylchloride” could not be searched because the term could not be found in the search databases. As noted previously, Applicants have now corrected the spelling of this term to benzenemethanaminium N-dodecyl-N,N-dimethylchloride. It is respectfully requested that the Examiner search this species.

In sum, in view of the foregoing arguments, we respectfully submit that the rejected claims are patentably distinct over the references cited by the Examiner and meet all other statutory requirements. We believe that the present Application is now in complete condition for allowance and, therefore, respectfully request the Examiner to reconsider the rejections in the Office Action and allow this Application.

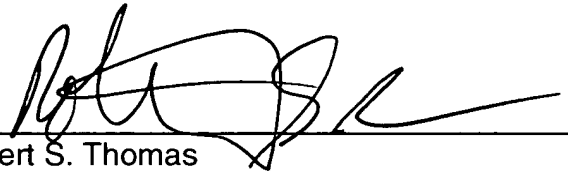
We invite the Examiner to telephone the undersigned should any issues remain after the consideration of this response. Please charge any additional fees that may be required to Deposit Account No. 50-2548.

Respectfully requested,

NELSON MULLINS RILEY & SCARBOROUGH

February 25, 2004

Date



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